# TWO NEW SPECIES OF *RAMPHOTYPHLOPS* (SQUAMATA: TYPHLOPIDAE) FROM QUEENSLAND

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To Australia's *Ramphotyphlops*-rich herpetofauna are added *R. robertsi* sp. nov. and *R. aspina* sp. nov. The former is known only from the holotype from Shipton's Flat, near Cooktown, northeastern Queensland. A midbody scale count of 22 separates it from all but five of its Australian congeners. From these it is easily distinguished by its strongly dichromatic pattern. *Ramphotyphlops. aspina* sp. nov. is known from the holotype and one paratype from the Barcaldine area, central Queensland. This species is very distinct, lacking the caudal spine which appears to be present in all other Australian *Ramphotyphlops* spp.

☐ *Squamata, Typhlopidae, Ramphotyphlops, Queensland, Australia.*

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Australia's snakes are relatively well-known taxonomically and, to a lesser degree, ecologically. However, one family, Typhlopidae, remains poorly-known on both fronts. Relative neglect of Australia's highly diverse *Ramphotyphlops* spp. results from a combination of factors. Many species are small, and similar superficially. Most are grey-brown/brown and have high ventral scale counts and head shields which are difficult to delineate. Hence, examination of specimens is time-consuming. Further, specimens of *Ramphotyphlops* are difficult to collect so, for many species, there are only small series in museum collections. Several species are known only from type material.

To the already *Ramphotyphlops*-rich Australian herpetofauna we add two new, highly-distinctive species. Prior to their discovery, 34 species of *Ramphotyphlops* were recognised from Australia, 16 from Queensland. Most Queensland species were described in the late 19th century in pioneering works by early 'giants' of herpetology (e.g., A. Boulenger, J. E. Gray and G. Peters); two date from the only Australia-wide revision of the genus (Waite, 1918); and two have been described recently (Ingram & Covacevich, 1993). Increasingly, it has become apparent that Australia's tropics and subtropics harbour many undescribed species (e.g., Storr, 1981; Ingram & Covacevich, 1993; Shea & Horner, 1997).

One of the new species is unusual in being markedly dichromatic. The other appears to be unique amongst Australian *Ramphotyphlops* spp. in lacking a caudal spine, a feature regarded as consistently present in the genus (e.g., Cogger, 1994; Storr et al., 1986). Like many other *Ramphotyphlops* spp., both are based on small samples — the first (from near Cooktown, northeastern Queensland [NEQ]) on a single specimen; the second (from the Barcaldine area, central Queensland [CQ]) on two specimens collected close to 80 years apart. While recognising that description of these species from such scant material precludes an account of variation, it seems reasonable to proceed because many more years may elapse before more specimens of either can be located. The collector of the NEQ specimen is a naturalist who has lived near the collection locality for 40+ years and knows the area intimately. That he has seen only one specimen of this species in that time evidences the difficulty in obtaining additional material. The specimens of these new species are small and slightly damaged. To avoid further damage, dissections to determine sex/maturity/state of male genitalia have not been undertaken. We follow Shea & Horner (1997) in assigning these new species to *Ramphotyphlops* on the basis of geography (Robb, 1966).

## MATERIALS AND METHODS

Snout-vent length was measured with a standard 30cm ruler. The rostral/head width ratio was calculated from head drawings of the holotypes. All other measurements were taken using Mitutoyo electronic callipers. The species accounts follow the format of Shea & Horner (1997).

The presence of a caudal spine in all currently recognised Australian species (34) except the new species from the Barcaldine area was confirmed by examination of specimens of the species

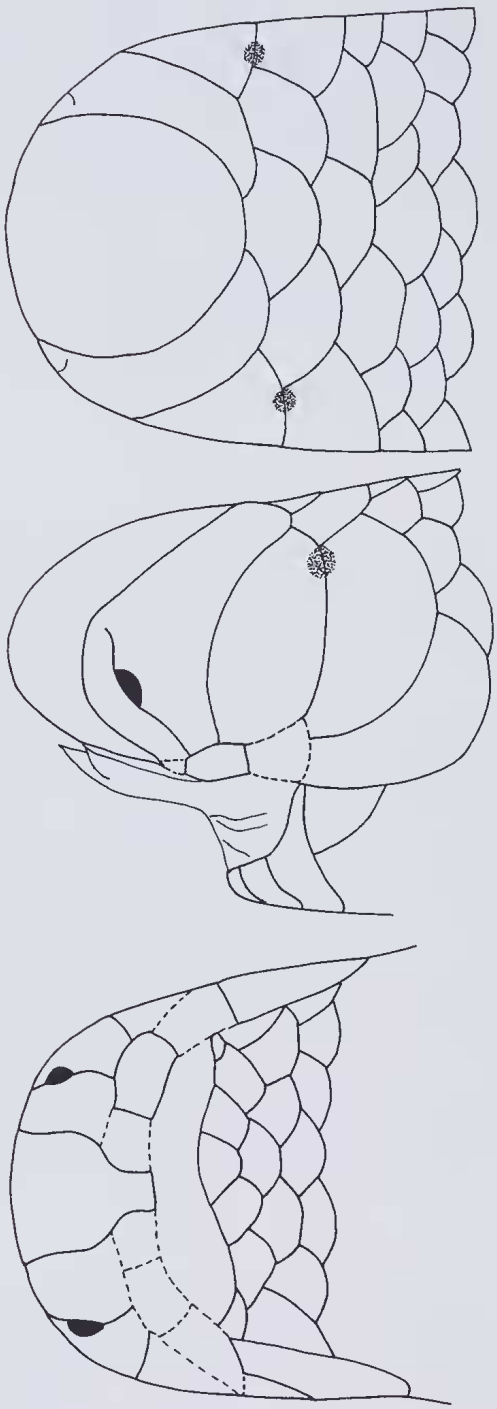

FIG. 1. *Ramphotyphlops robertsi* sp. nov. (Holotype QMJ63736) Above, dorsal view of head. Centre, lateral view. Below, ventral view.

listed in Appendix 1. One type description: *R. tovelli* (Loveridge, 1945); extrapolation from Cogger (1986), Storr et al. (1986) and Aplin & Donnellan (1993): *R. australis* (Gray 1845), *R. centralis* Storr, 1984, *R. endoterus* (Waite, 1918), *R. hamatus* Storr, 1981, *R. howi* Storr, 1983, *R. kimberleyensis* Storr, 1981, *R. leptosoma* Robb, 1972, *R. leucoproctus* (Boulenger, 1889), *R. margaretae* Storr, 1981, *R. micromma* (Kinghorn, 1929), *R. pilbarensis* Aplin & Donnellan, 1993, *R. pinguis* (Waite, 1897), *R. troglodytes* Storr, 1981, *R. waitii* (Boulenger, 1895) and *R. yampiensis* Storr, 1981. Whether the presence or absence of a caudal spine is related to sexual or ontogenetic differences, or damage, was assessed in a sample of 24 *R. nigrescens* which contained adults of both sexes, and juveniles. All specimens, including those desiccated or damaged, have a prominent caudal spine. Removal of the distal scale containing the caudal spine from one specimen (QMJ57932) required considerable force. Once this was done, the tail of this specimen was compared with those of the two specimens from the Barcaldine area (QMJ7, J51541). The tails of both Barcaldine specimens were intact, being capped by a smooth, highly-polished distal scale. By comparison, the tail of QMJ57932 terminated in dull, dermal tissue.

**Ramphotyphlops robertsi** sp. nov.
(Figs 1 & 2 )

ETYMOLOGY. Named for Lewis Roberts, eminent naturalist and Honorary Consultant of the Queensland Museum, collector of the holotype.

MATERIAL. HOLOTYPE: QMJ63736, Romeo Ck, via Shipton's Flat (15°50'S, 145°14'E) NEQ, 10 Feb, 1983.

DIAGNOSIS. *Ramphotyphlops robertsi* sp. nov. is easily distinguished from its congeners by the following characters combined: strongly dichromatic pattern (in alcohol, dorsum purplish brown, venter white); 22 midbody scale rows; 556 ventrals; a bluntly-rounded snout; rostral circular from above; nasal not completely divided by nasal cleft, just visible from above and joining second supralabial below.

DESCRIPTION. Head smoothly-rounded above and in profile; dorsal surface of rostral large and circular (58% head width); ventral lobe of rostral narrower (32% head width), tapering caudally, lateral margins concave; nasals broadly separated by prefrontal; prefrontal slightly larger than frontal; supraoculars broadly separated by prefrontal/frontal junction; nostrils inferior, near apex of snout, equi-distant from rostral and preocular, opening laterally; nasal cleft beginning at second supralabial, extending across rostroventral margin of nostril, then curving towards the rostral and


FIG. 2. Holotype of *Ramphotyphlops robertsi* (QMJ63736).

terminating 2/3 the distance from nostril to rostral, just visible from above; preocular narrower than nasal and subequal to ocular; eye small only just visible, beneath preocular/ocular suture, and immediately below preocular/ocular/supraocular junction; posterior edge of ocular overlaps three equal scales (one parietal and two postoculars); four supralabials — first smallest and overlapped by rostral lobe of nasal; second supralabial larger overlapped by rostral lobe and caudal lobe of nasal and preocular; third supralabial larger, overlapped by preocular, strongly overlapping ocular; fourth supralabial much the largest, elongate, overlapped by ocular; mental subequal to postmental; infralabials three — second largest; microtubercles of head shields most dense on nasal scute and lower surface of rostral; glands visible beneath posterior margin of nasals; tail with terminal spine.

Midbody scale rows 22; ventral scales 556; subcaudal scales 12; SVL 285mm; body width 4.3mm (1.5% SVL); tail length 4.7mm (1.6% SVL); head width 2.9mm (1.0% SVL).

Colour in alcohol, strongly dichromatic, dorsal and ventral colours sharply delineated; dorsum dark purplish brown (11 scale rows); rostral cream; venter uniformly cream (11 scale rows).

COMPARISON. *Ramphotyphlops robertsi* can be confused with only *Ramphotyphlops* spp. which have 22 midbody scale rows and a nasal cleft beginning at the second supralabial [from Australia - *R. australis*, *R. hamatus*, *R. kimberleyensis*, *R. pilbarensis*, *R. polygrammicus* and *R. troglodytes*; from PNG/eastern Indonesia - *R. depressus* (Peters, 1880), *R. flaviventer* (Peters, 1864), *R. olivaceus* (Gray, 1845) and *R. willeyi* (Boulenger, 1900)]. It can be separated from the Australian spp. by its strongly dichromatic colour/pattern. *R. robertsi* is further separated from *R. australis* by a considerably higher ventral scale count (556 vs 278-357); from *R. hamatus* and *R. pilbarensis* by snout shape in profile (rounded vs angular); from *R. kimberleyensis* and *R. polygrammicus* by the shape of the rostral from above (circular vs elongate) and from *R. troglodytes* by

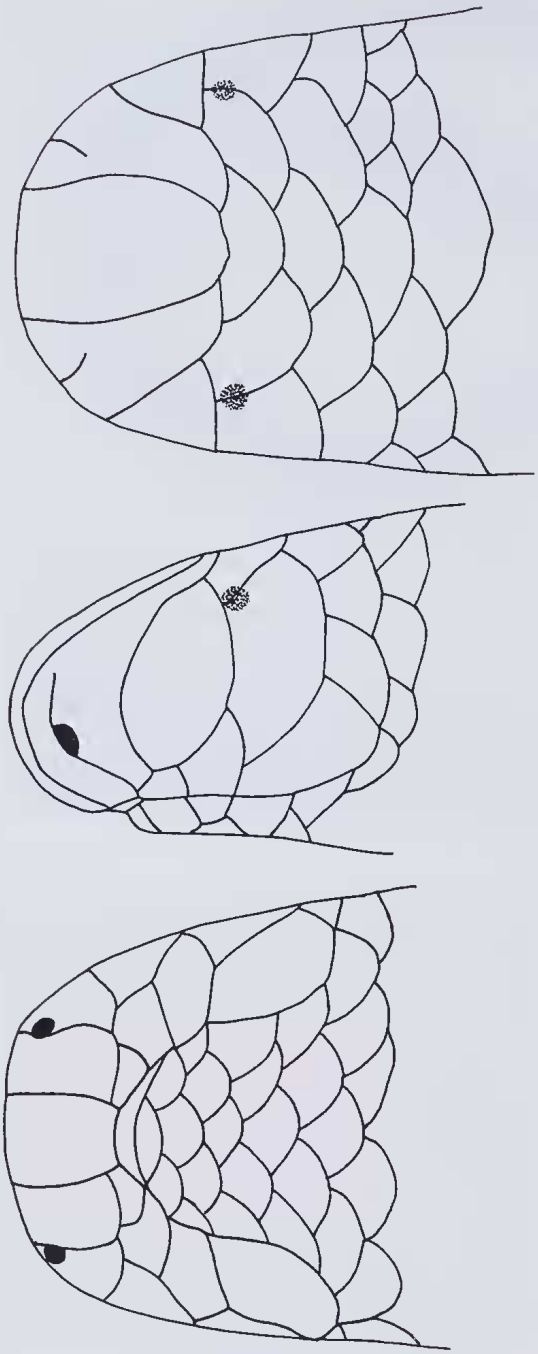

FIG. 3. *Ramphotyphlops aspina* sp. nov. (Holotype QMJ51541). Above, dorsal view of head. Centre, lateral view. Below, ventral view.

the nasal cleft (not completely dividing nasal scale vs completely dividing nasal scale). From the PNG/eastern Indonesia spp. (except *R. flaviventer*) it can also be separated by its strongly dichromatic colour/pattern. From *R. flaviventer* it is readily distinguished by the shape of the rostral from above (circular vs oval). This character also separates it from *R. depressus*. *R. robertsi* is further separated from these two species by the condition of the nasal cleft (visible from above vs not visible from above); from *R. olivaceus* by its rostral scale (without a transverse keel vs with a transverse keel) and from *R. willeyi* by its snout profile (smoothly-rounded vs a rounded wedge) (McDowell, 1974; Wallach, 1996).

HABITAT. Open forest dominated by Blue Gum, *Eucalyptus tereticornis*, Brown Bloodwood, *E. trachyphloia* and Yellow Stringybark, *E. acmenoides*.

REMARKS. The type specimen was found emerging from a fallen *Eucalyptus* branch which had been hollowed-out by termites, and subsequently recolonised by small black ants. Both the snake and the ants were 'agitated', suggesting that the branch may have fallen to the ground recently. The snake was seen feeding on ant eggs, which were regurgitated after its capture (L. Roberts, pers. comm.).

### **Ramphotyphlops aspina** sp. nov.
(Figs 3 & 4)

ETYMOLOGY. Latin, *a-*, without and *spina*, a spine.

TYPE MATERIAL. HOLOTYPE: QMJ51541, Margot Stn, 20km N Barcaldine (23°27'S, 145°16'E) CQ, donated 1990 by Tim Pulsford. PARATYPE: QMJ7, Coreena Stn, Barcaldine (23°17'S, 145°24'E) CQ, registered 26 May, 1911, donated W.C. Miller.

DIAGNOSIS. *Ramphotyphlops aspina* lacks a caudal spine. It is further distinguished from other members of the genus by the following characters combined: 18 midbody scale rows; 403-428 ventrals; snout bluntly-rounded from above, rounded and flattened laterally; rostral elongate from above; nasal not completely divided by nasal cleft, clearly visible from above and joining second supralabial below.

DESCRIPTION. Head rounded and slightly-flattened in profile; head bluntly rounded dorsally, slightly 'squared'; rostral large and elongate above (37% head width), slightly tapered caudally; ventral lobe of rostral narrower (24% head width) tapering caudally, lateral margins parallel; nasals broadly separated by prefrontal (QMJ51541) or in point contact (QMJ7); prefrontal slightly larger than frontal (QMJ51541) or smaller than frontal (QMJ7); supraoculars broadly separated by prefrontal/frontal junction;


FIG. 4. Holotype of *Ramphotyphlops aspina* (QMJ51541).

nostrils inferior, near apex of snout, equi-distant from rostral and preocular, opening laterally; nasal cleft beginning at second supralabial, extending across rostroventral margin of nostril, passing dorsally and slightly rostrally to terminate 2/3 to 3/4 the distance from nostril to rostral, clearly visible from above; nasal wider than preocular; preocular about as wide as ocular; eye small and distinct beneath ocular/supraocular junction, immediately posterior to preocular/ocular/supraocular junction; ocular caudally overlaps two postoculars and a larger parietal; first supralabial smallest, overlapped by rostral lobe of nasal; second supralabial larger, overlapped by rostral lobe and caudal lobe of nasal and preocular; third supralabial larger, overlapped by preocular but strongly overlapping ocular; fourth supralabial much the largest, elongate, overlapped by ocular; mental narrower than postmental; infralabials three – third the largest; microtubercles of head shields densest on lower surfaces of rostral and nasals; glands not visible below margins of head shields; tail lacking terminal spine.

Midbody scale rows 18; ventral scales 403-428; subcaudal scales 10-16; SVL 230-275mm; body width 3.6-3.7mm (1.3-1.6% SVL); tail length 1.1 -2.3% SVL; head width .94-1.1% SVL.

Measurements of holotype: ventral scales 403; subcaudal scales 16; SVL 230mm; body width 3.8mm; tail 5.5mm; head width 2.6mm.

Colour in alcohol, pale pinkish/tan above and below; each scale with a darker edge.

COMPARISON. Only Australian species of *Ramphotyphlops* have 18 midbody scale rows. *Ramphotyphlops aspina* can be confused with those Australian species having 18 midbody scale rows and a nasal cleft beginning at the second supralabial (*R. affinis*, *R. grypus*, *R. guentheri*, *R. howi*, *R. leptosoma*, *R. margaretae*, *R. micromma* and *R. chamodracaena*). It is separated from these species in lacking a caudal spine. *R. aspina* can be separated further from *R. affinis* and *R. grypus* by its snout profile (rounded vs angular); from *R. guentheri*, *R. margaretae* and *R. chamodracaena* by its nasal cleft (clearly visible from above vs

not visible from above) and from *R. howi*, *R. leptosoma* and *R. micromma* by its nasal shield (not completely divided vs completely divided).

HABITAT. The only two collection localities for *R. aspina* are in 'sheep country' of Queensland's central downs. Most of the area in which *R. aspina* was found has been cleared of open eucalypt forest and replaced by introduced pasture grasses.

## ACKNOWLEDGEMENTS

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## APPENDIX 1

Specimens of *Ramphotyphlops* examined: Queensland Museum: *R. affinis* (Gray, 1845) - QMJ11630, 5262, 23870, 44501; *R. bituberculatus* (Peters, 1863) - QMJ33377, 33378, 33380; *R. braminus* (Daudin, 1803) - QMJ32880, 32970, 39690; *R. broomi* (Boulenger, 1898) - QMJ2954, 20315, 47503; *R. chamodracaena* Ingram & Covacevich, 1993 - QMJ28082, 31963, 39673, 40233 holotype, 41550, 51980; *R. diversus* (Waite, 1894) - QMJ2943 holotype; *R. grypus* (Waite, 1918) - QMJ23943, 27510, 39596; *R. guentheri* (Peters, 1865) - QMJ2266; *R. ligatus* (Peters, 1879) - QMJ57653, 62775; *R. nigrescens* (Gray, 1845) - QMJ2875, 2884, 3447, 5731, 6636, 7346, 10577, 12348, 20696, 22700, 22706, 35333, 35649, 38527, 43754-55, 43780, 44049, 45255, 46130, 46316, 54538, 54856, 57932; *R. polygrammicus* (Schlegel, 1839) - QMJ5748, 59885, 60625, 61588; *R. proximus* (Waite, 1893) - QMJ2936, 10927, 14212, 38741; *R. silvia* Ingram & Covacevich, 1993 - QMJ8521, 23620, 27387 holotype, 31576, 31577, 31579, 35872, 43785, 46128, 60852; *R. unguirostris* (Peters, 1867) - QMJ29747, 44502, 56903, 58642; *R. weidii* (Peters, 1867) - QMJ22670, 23965, 43373, 47964. Northern Territory Museum: - *R. minimus* - NTMR7521, 9874. *R. nema* Shea & Horner 1997 - NTMR16047, 21665 holotype, 34110. Australian Museum: *R. minimus** (Kinghorn, 1929) AMR9692 holotype; *R. yirrikalae* (Kinghorn, 1942) - AMR12381 holotype.

* The holotype of *R. minimus* possesses a caudal spine. However, one of two additional specimens currently assigned to this taxon in the collection of the Northern Territory Museum lacks a spine (P. Horner, pers. comm.).